

HYACINTHACEAE

NOMENCLATURAL CORRECTIONS IN SUB-SAHARAN AFRICA, PREDOMINANTLY SUBFAM. URGINEOIDEAE

The recent publication of a checklist of the flowering plants of sub-Saharan Africa by Klopper *et al.* (2006) represents a major consolidation of taxonomic information from across the region. An added benefit is that it highlights names that are still lacking combinations in genera that have been recircumscribed in recent revisions. Such instances pose an impediment to consistent checklists for the continent and for herbarium curation. Hyacinthaceae are one such instance. Generic circumscriptions in the family have been significantly and often substantially altered in the last few decades and several tropical taxa have been overlooked in the process. Here we address species treated by Klopper *et al.* (2006) in genera of predominantly subfamily Urgineoideae, one of the three subfamilies of Hyacinthaceae represented in Africa (Speta 1998b; Manning *et al.* 2004). The fourth subfamily Oziroëoideae is restricted to South America.

The generic classification of Urgineoideae has been discussed elsewhere (Speta 1998b; Manning *et al.* 2004). Whatever the competing merits of the available systems, the synthetic classification recognising just the two genera *Bowiea* Harv. ex Hook.f. (1 sp.) and *Drimia* Jacq. ex Willd. (\pm 100 spp.) is currently the only practicable one, and has been most fully implemented in continental Africa and Madagascar (Manning *et al.* 2004; Pfosser *et al.* 2006; Wetschnig *et al.* 2007). Although Klopper *et al.* (2006) adopted this system, they were forced to implement it only partially and somewhat inconsistently by having to accommodate those names, largely west-tropical African, lacking combinations in *Drimia*. Consequently, they still list 21 species under *Urginea* Steinh., although this genus has long since been subsumed within *Drimia* (Jessop 1977), plus two names each under *Schizobasis* Baker and *Thuranthos* C.H. Wright. Less explicably, they duplicate some entries under the generic names *Charybdis* Speta and *Ebertia* Speta.

Here we examine the names listed by Klopper *et al.* (2006) under the genera *Charybdis* (1 sp.), *Ebertia* (2 spp.), *Schizobasis* (2 spp.), *Thuranthos* (2 spp.) and *Urginea* (21 spp.), and provide the appropriate taxonomic conclusions where possible, following the classification of the family proposed by Manning *et al.* (2004) [subfamilies Hyacinthoideae and Urgineoideae] and Manning *et al.* (2009) [subfamily Ornithogaloideae]. It

is an extraordinary fact that taxa from all three of these subfamilies have been described as species of *Urginea* in the past. We are also able to correct some additional errors and oversights in the list, including duplications and overlooked synonyms. Of a total of 27 names that we considered, one is a new synonym of *Schizocarphus nervosus* (Burch.) Van der Merwe (Hyacinthoideae), six are new or existing synonyms in *Albuca* L. (Ornithogaloideae), nine are new or existing synonyms in *Drimia* (Urgineoideae), with an additional three new combinations in that genus, four are erroneous names, and the identities of a further four remain uncertain.

ACCEPTED NAMES

Subfam. *Hyacinthoideae*

Schizocarphus nervosus (Burch.) Van der Merwe in Flowering Plants of South Africa 23: t. 904 (1943). *Ornithogalum nervosum* Burch.: 537 (1822). *Scilla nervosa* (Burch) Jessop: 243 (1970). Type: South Africa, 'between Griquatown and Wittewater, Burchell 1968 (K, holo.—ALUKA image!).

Urginea bragae Engl. in Die Pflanzenwelt Ost-Afrikas C: 142 (1895), syn. nov. Type: Portuguese East Africa [Mozambique], Beira, *Braga s.n.* (B100167478, holo.—digital image!).

Examination of the type of this name confirms that it is in fact a narrow-leaved form of *Schizocarphus nervosus* (Burch.) Van der Merwe, which is widely distributed through subtropical Africa. The pilose peduncle and veins, and the fibrous neck on the bulb described in the protologue are highly diagnostic. An annotation label with the unpublished name *Schizocarphus bragae* affixed to the type of *Urginea bragae* by U. & D. Müller-Doblies is consistent with our generic placement. *S. nervosus* is, however, extremely variable in leaf shape and the type of *U. bragae* falls well within the variation accepted for the species.

Subfam. *Ornithogaloideae*

Albuca nigritana (Baker) Troupin in Bulletin du Jardin botanique de l'État à Bruxelles 25: 231 (1955).

Albuca ledermannii Engl. & K.Krause: 143 (1910).

Klopper *et al.* (2006) overlooked the fact that *Albuca ledermannii* was treated as a synonym of *Albuca nigritana* by Hepper (1968).

Albuca pulchra (Schinz) J.C.Manning & Goldblatt in Manning *et al.* in *Taxon* 58: 92 (2009). *Ornithogalum pulchrum* Schinz: 221 (1890).

Urginea angolensis Baker in *Journal of Botany* 12: 364 (1874), *syn. nov.* [non *Albuca angolensis* Welw. (1859)]. Type: 'Angola, in ditone Ambriz in sylvis', June 1873, *Monteiro & Monteiro s.n. K000400581* (K, holo.—ALUKA image!).

Examination of the type of *Urginea angolensis* confirms that the long, linear-lanceolate bracts, specified as unspurred in the protologue (Baker 1874), do indeed lack the basal spurs characteristic of Urgineoideae and that the species is misplaced in the genus and subfamily. The depressed-globose capsules with large, disc-like seeds, and the free, subsimilar tepals with veins congested along the midline place the species in *Albuca* subg. *Namibiogalum* (= *Battandiera* Maire *vide* Martínez-Azorín *et al.* 2011) (Ornithogaloideae). We conclude that it represents a form of *Albuca pulchra* with slightly shorter pedicels than usual. Although recorded from Angola by Obermeyer (1978), *A. pulchra* was not included in the recent checklist for that country (Figueiredo & Smith 2008).

Although *Urginea angolensis* is the earliest name for the species, the existence of *Albuca angolensis* Welw. (1859) precludes its transfer to that genus.

Albuca sudanica A.Chev. in *Mémoires de la Société Botanique de France* 2: 93 (1908).

Albuca garuensis Engl. & K.Krause: 144 (1910).

Albuca stricta Engl. & K.Krause: 144 (1910).

Urginea garuensis Engl. & K.Krause: 147 (1910).

Albuca garuensis, *A. stricta* and *Urginea garuensis* were all treated as synonyms of *Albuca sudanica* by Hepper (1968), a treatment overlooked by Klopper *et al.* (2006).

Albuca virens (Ker Gawl.) J.C.Manning & Goldblatt in Manning *et al.* in *Taxon* 58: 93 (2009). *Ornithogalum virens* Ker Gawl.: sub t. 814 (1824) [= *Ornithogalum tenuifolium* Redouté *sensu* Obermeyer 1978]. Type: Mozambique, Delagoa Bay, *Forbes s.n. K000365579* (K, holo.—ALUKA image!).

Ornithogalum flavovirens Baker: 366 (1874). *Urginea flavovirens* (Baker) Weim.: 442 (1937). *Stellarioides flavovirens* (Baker) Speta: 173 (2001). Lectotype, designated by Obermeyer: 361 (1978): South Africa, [Eastern Cape], near Somerset East, *MacOwan 1852* (K, lecto.—ALUKA image!; BOL, GRA, iso.).

Urginea flavovirens is a later combination of *Ornithogalum flavovirens*, treated by Obermeyer (1978) as a synonym of *Ornithogalum tenuifolium* Redouté [now

Albuca virens (Manning *et al.* 2009)]. We have seen the type and concur with Obermeyer's opinion.

Subfam. *Urgineoideae*

Drimia altissima (L.f.) Ker Gawl. in *Curtis's Botanical Magazine* 27: t. 1074 [excl. illustration] (1808). *Ornithogalum altissimum* L.f.: 199 (1782). Type: South Africa, 'Cap. bonae spei', *Thunberg s.n. UPS-THUNB8275* (UPS-THUNB, holo.—microfiche!).

Ornithogalum giganteum Jacq.: 45, t. 87 (1797). *Urginea gigantea* (Jacq.) Oyewole: 167 (1975). Type: Illustration in Jacquin, *Plantarum rariorum horti caesarei schoenbrunnensis* 1: t. 87 (1797).

Although *Ornithogalum giganteum* has been consistently treated as a synonym of *Drimia altissima* (Ker Gawler 1808; Hutchinson 1936; Jessop 1977; Obermeyer 1978), Oyewole (1975) favoured the recognition of both *D. altissima* (as *Urginea altissima*) and *U. gigantea* based on his studies in Nigeria. *D. altissima* is so widely distributed through Africa that any meaningful recognition of segregates can only take place in the context of its entire distribution.

Drimia calcarata (Baker) Stedje in *Nordic Journal of Botany* 7: 663 (1987). *Ornithogalum calcaratum* Baker: 723 (1872a). Lectotype, designated by Stedje: 663 (1987): Illustration from a living plant sent from South Africa, Eastern Cape by *MacOwan* (K, lecto.—ALUKA image!).

Urginea modesta Baker: 6 (1892). *Drimia modesta* (Baker) Jessop: 302 (1977). Type: South Africa, 'Pondoland', *Bachmann 273* (K, holo.).

Urginea nyasae Rendle in *Transactions of the Linnean Society of London*, ser. 2, *Botany*, 4(1): 50 (1894), *syn. nov.* Type: Malawi, 'Milanji, 6 000 ft.', Oct. 1891., *Whyte s.n. BM000911782* (BM, lecto.—ALUKA image!, designated here). [Syntype: 'Nyasa-land', 1891, *Buchanan 998 BM000911783* (BM, *syn.*—ALUKA image!).] [The Whyte collection is selected as the lectotype as being the most complete, including flowers and seeds].

Urginea umgeniensis Poelln.: 209 (1944), as *nom. nov. pro U. pauciflora* Baker: 786 (1901), *hom. illegit. non Baker*: 539 (1898). Type: South Africa, 'Natal, Umgeni Falls', *Rehmann 7455* (Z, holo.).

Urginea nyasae was overlooked by Stedje (1987, 1996) in her treatment of *Drimia* for East Africa. We have examined the type material and conclude that it is conspecific with *D. calcarata*. The filiform leaf, slender inflorescence of small flowers, long spurs on the lower bracts, and the fusiform seeds with reduced wings are diagnostic for that species.

Urginea umgeniensis was regarded as a synonym of *Drimia modesta* by Jessop (1977) in his revision of the South African species and the species was in turn considered to be a synonym of *Drimia calcarata* (Stedje 1987), a treatment overlooked by Klopper *et al.* (2006).

Drimia glaucescens (Engl. & K.Krause) H.Scholz in *Bulletin du Muséum National d'Histoire Naturelle Sec-*

tion B, *Adansonia*, Sér. 4, 11(4): 444 (1990). *Urginea glaucescens* Engl. & K.Krause: 146 (1910).

Urginea paludosa Engl. & K.Krause: 146 (1910).

Urginea ensifolia (Thonn.) Hepper: 497 (1968).

Urginea paludosa was treated by Hepper (1968) as a synonym of *Urginea ensifolia* (Thonn.) Hepper. The transfer of this epithet to *Drimia* is prevented by the earlier *D. ensifolia* Eckl., and Scholz (1990) accordingly provided the new combination *D. glaucescens* based on the next available name, *Urginea glaucescens* Engl. & K.Krause.

***Drimia indica* (Roxb.) Jessop** in *Journal of South African Botany* 43: 272 (1977). *Scilla indica* Roxb.: 147 (1824). Lectotype, designated by Deb & Dasgupta: 118 (1974): India, Coromandelia, *Roxburgh s.n.*, illustration t. 1821 (CAL, lecto., not seen).

Urginea zambesiaca Baker in *Journal of the Linnean Society, Botany* 13: 223 (1872a), syn. nov. *Thuranthos zambesiicum* (Baker) Kativu in *Kativu & Drummond*: 113 (1994). Type: Mozambique, 'lower Zambesi, near expedition Island', *Kirk 128* (K, holo., not seen).

Urginea salmonea Berhaut in *Flore du Senegal*, ed. 2: 428 (1967), syn. nov. Type: Senegal, Mbaou, 16 Jun. 1954, *Berhaut 1682* (P, holo.—ALUKA image!; P, iso.—ALUKA image!).

Urginea zambesiaca was distinguished from *Drimia indica* by its slightly longer style and obtuse capsules (Baker 1872a). Although often confused with *Drimia macropcarpa* Stedje, the type of *Urginea zambesiaca* Baker was considered by Stedje (1996) to fall within the range of variation of *Drimia indica*, although she did not formally treat it as a synonym of that species. We remedy this omission here.

The type of *Urginea salmonea* is part of the widespread and variable *Drimia indica* complex. It was diagnosed by Berhaut (1967) on minor morphological grounds (ovary size and leaf apex shape) against *U. sebirei* Berhaut, a species that is now treated as conspecific with *D. indica*. The morphological and cytological variation among Nigerian populations of *D. indica* was extensively studied by Oyewole (1987a,b), who concluded that the species comprises a stable polymorphism in which different morpho- and ecotypes attained some level of reproductive isolation and genetic stability. Detailed genetic studies are clearly a prerequisite for any meaningful understanding of patterns of variation in the species. Pending this, we consider it prudent to provisionally treat *U. salmonea* as a synonym of *D. indica*.

***Drimia intricata* (Baker) J.C.Manning & Goldblatt** in *Goldblatt & Manning, Strelitzia* 9: 712 (2000). *Anthericum intricatum* Baker: 140 (1872b). *Schizobasis intricata* (Baker) Baker: 140 (1874). Lectotype, designated by Stedje & Thulin: 600 (1995): South Africa, without locality, *Zeyher 4284* (K, lecto.; SAM, isolecto!).

Schizobasis angolensis Baker in *Transactions of the Linnean Society of London, Botany* 1: 255 (1878), syn. nov. Type: Angola, 'Pungo Andongo, ad rupes ipsius

Praesidis', *Welwitsch 3866 K000257004* (K, holo.—ALUKA image!).

Schizobasis gracilis R.E.Fr. in *Wissenschaftliche Ergebnisse der Schwedischen Rhodesia-Kongo-Expedition 1911–1912* 1: 227 (1916), syn. nov. Type: 'Nordost-Rhodesia, Kalungwisi-river, in Felsenritzen im Trockenwald, *Friese 1157* (holo, not located).

Drimia intricata, as currently circumscribed, is a highly variable species with a wide distribution through Africa, including Angola (Stedje 1996), and with several current synonyms (Jessop 1977). It is possible that segregates should be recognised, but this can only be done when the species is reviewed across its entire range. In the interim it seems gratuitous to transfer the names *Schizobasis angolensis* and *S. gracilis* to *Drimia* and we accordingly place them in provisional synonymy. Both types fall within the range of variation currently accepted for the species as circumscribed by Jessop (1977) under the name *Schizobasis intricata* (Baker) Baker.

***Drimia johnstonii* (Baker) J.C.Manning & Goldblatt**, comb. nov. *Urginea johnstonii* Baker in *Flora of Tropical Africa* 7: 539 (1898). Type: 'Angola, near the river Cunene', Sept. 1883, *Johnston s.n. K000400576* (K, holo.—ALUKA image!).

The small, caducous bracts and thin-textured perianth are consistent with the placement of this species in *Drimia*. The absence of spurs on the bracts mentioned by Baker (1898) in the protologue is not surprising given that the lower bracts have fallen—often only the lower bracts in the raceme are spurred in species of *Drimia*. The type of *U. johnstonii* was later annotated by Milne-Redhead on the sheet as indistinguishable from *Urginea brachystachys* Baker, now *D. brachystachys* (Baker) Stedje, from Tanzania and Ethiopia. This remains to be confirmed.

***Drimia minuta* J.C.Manning & Goldblatt**, nom. nov. pro. *Drimia nana* (Oyewole) J.C. Manning & Goldblatt in *Manning et al. in Edinburgh Journal of Botany* 60: 557 (2004), hom. illegit. non *D. nana* (Snijman) J.C.Manning & Goldblatt: 111 (2003). *Urginea nana* Oyewole: 623 (1989). *Ebertia nana* (Oyewole) Speta: 68 (1998a). Type: Nigeria, near the academic area, University of Ilorin, *S00/2111* (IUH, holo.; FHI, iso.).

The combination *Drimia nana* (Oyewole) J.C. Manning & Goldblatt (Manning *et al.* 2004) for the Nigerian species *Urginea nana* Oyewole is an illegitimate later homonym of the Namaqualand taxon *D. nana* (Snijman) J.C.Manning & Goldblatt (2003). We provide a replacement name here.

***Drimia psilostachya* (Welw. ex Baker) J.C.Manning & Goldblatt**, comb. nov. *Urginea psilostachya* Welw. ex Baker in *Transactions of the Linnean Society of London*, ser. 2, *Botany* 1(5): 247 (1878). Type: Angola, 'Cazengo in dumetis siccis arenosis', *Welwitsch 3807* (BM, K, syn.—ALUKA images!).

The bracts are described as calcarate by Baker (1878) and we confirm this condition on the type and its place-

ment in *Drimia*. Its specific status remains to be investigated.

Drimia simensis (Hochst. ex A.Rich.) Stedje in Nordic Journal of Botany 15: 597 (1995). *Scilla simensis* Hochst. ex A.Rich.: 327 (1850). *Urginea simensis* (Hochst. ex A.Rich.) Schweinf.: 291 (1867). *Charybdis simensis* (Hochst. ex A.Rich.) Speta: 60 (1998a).

Klopper *et al.* (2006) include this taxon twice, once as *Charybdis simensis* and again as *Drimia simensis*, uncertain that these names were combinations of the same epithet in different genera.

Drimia sudanica Friis & Vollesen in Nordic Journal of Botany 19: 210 (1999), as nom. nov. pro *Urginea pauciflora* Baker: 539 (1898) [non *Drimia pauciflora* Baker (1892)]. *Ebertia pauciflora* (Baker) Speta: 68 (1998a). Type: Sierra Leone, 'near Wallia, on the River Scarcies', 11 Feb. 1892, *Scott-Elliot 4580 K000400576* (K, holo.—ALUKA image!).

Klopper *et al.* (2006) include this taxon twice, once as *Ebertia pauciflora* and again as *Drimia sudanica*, unaware that they are alternate names for the same species in different genera.

Drimia viridula (Baker) J.C.Manning & Goldblatt, comb. nov. *Urginea viridula* Baker in Flora of Tropical Africa 7: 538 (1898). Type: 'Congo, cultivated specimen', fl. in cult. 10 Sept. 1886, *Bull s.n. K000257329* (K, holo.—ALUKA image!).

This taxon is treated as a distinct member of the *D. altissima* complex by Oyewole (1975). The spurred bracts and evanescent flowers of the type are consistent with the genus *Drimia*.

ERRONEOUS NAMES

'*Urginea brevifolia* Baker'. This name appears to be a typographical error for *Drimia brevifolia* Baker, a synonym of *Ledebouria revoluta* (L.f.) Jessop (Stedje & Thulin 1995).

'*Urginea fischeri* Baker'. This name appears to be a typographical error for *Drimia fischeri* Baker, a synonym of *Drimiopsis fischeri* (Engl.) Baker (Stedje & Thulin 1995).

'*Urginea hildebrandtii* Baker'. This name appears to be a typographical error for *Drimia hildebrandtii* Baker, a synonym of *Ledebouria kirkii* (Baker) Stedje & Thulin (Stedje & Thulin 1995).

'*Urginea angustisepala* Engl.' This name is a typographical error for *Drimia angustisepala* Engl., a synonym of *Ledebouria kirkii* (Baker) Stedje & Thulin (Stedje & Thulin 1995).

UNCERTAIN NAMES

We have been unable to locate type material to confirm the identity or generic placement of the following names.

Urginea bequaertii De Wild. [as '*bequaerti*'] in Plantae Bequaertianae 1: 31 (1921). Type: 'Belgian Congo, savane herbeuse, *Bequaert 2768* (?BR, holo., not located).

The protologue makes no mention of the presence or absence of spurs on the bracts. Sofie De Smedt of the National Botanic Garden of Belgium confirmed that the type was not at BR in June 2012, but indicated that it might possibly be part of an undocumented loan that was outstanding at the time (De Smedt, pers. com. 26 June 2012). The bracts are described as 'lanceolate-linear, ... exceeding the buds and sometimes the flowers', which are greenish white with 'tepals 6–7 × 2.2 mm, brown on keel, with 3 veins'. The relatively large bracts are anomalous in *Drimia* and De Wildeman in fact compares the species to *Albuca abyssinica* in the protologue. We suspect that the name may well apply to a species of *Albuca*, possibly *A. virens*. A reference to *Ornithogalum tenuifolium* (now *Albuca virens*) made by Dominique Champluvier in 1987 on the species cover of *U. bequaertii* at BR is strong circumstantial support for this conjecture.

Urginea brevipes Baker in Journal of Botany 12: 364 (1874). Type: 'Senegambia', *Perrottet 782* ('Herb. DC.', holo., not located).

The protologue makes no mention of the presence or absence of spurs on the bracts. The type is noted by Baker (1874) to have been in 'Herb. DC.' Dr L. Gautier, Head Curator of Phanerogams at Geneva, confirmed it was not at G in June 2012, but indicated that it might possibly be part of an undocumented loan that was outstanding at the time (Gautier, pers. com. 8 June 2012).

Urginea grandiflora Baker in Journal of the Linnean Society, Botany 13: 223 (1872a). Type: Sudan, 'in ditone Maris Rubri, Hor Tamanib, alt. 600 ped., *Lord s.n.* (holo., not located on ALUKA).

This species is known only from the type, collected on Jebel Tamanib, a mountain along the Red Sea near Samakin in northeast Sudan. Its identity remains unknown.

Urginea insignis Engl. & K.Krause in Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie 45: 147 (1910). Type: 'Nord-Kamerun: bei Garua, in sandiger, teilweise steiniger und felsiger Gebüschsavanne', April 1909, *Ledermann 3302, 3350* (†B, syn.).

Engler's herbarium was unfortunately lost (Staffleu & Cowan 1976) and the identity and correct generic placement of this name is unclear. Hutchinson (1936) was unable to account for this name in his treatment of the family for West Tropical Africa. Several of Engler & Krause's Cameroonian hyacinths have been shown by Hepper (1968) to be synonyms of other species and it is possible that this taxon, too, will prove to be conspecific with some other species.

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REFERENCES

- BAKER, J.G. 1872a [1873]. Revision of the genera and species of Scilleae and Chlorogaleae. *Journal of the Linnean Society, Botany* 13: 209–292.
- BAKER, J.G. 1872b. Revision of the nomenclature and arrangement of the Cape species of *Anthericum*. *The Journal of Botany, British and Foreign* 10: 135–141.
- BAKER, J.G. 1874. Description of new species of Scilleae and other Liliaceae. *The Journal of Botany, British and Foreign* 12: 363–368.
- BAKER, J.G. 1878 [1880]. Report on the Liliaceae, Iridaceae, Hypoxidaceae, and Haemodoraceae of Welwitsch's Angolan Herbarium. *Transactions of the Linnean Society of London, ser. 2, Botany* 1,5: 245–274.
- BAKER, J.G. 1892. Liliaceae novae Africae australis herbarii regii Berolinensis. *Botanischen Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 15, Beiblatt 35: 5–8.
- BAKER, J.G. 1898. Liliaceae. In W.T. Thiselton-Dyer, *Flora of tropical Africa* 7: 421–568. Reeve, Covent Garden.
- BAKER, J.G. 1901. Liliaceae. In H. Schinz, Beiträge zur Kenntnis der Afrikanischen Flora (Neue Folge.) *Bulletin de l'Herbier Boissier, Ser. 2, 1*: 780–788.
- BERHAUT, J. 1967. Descriptions des espèces nouvelles: *Urginea salmonea*. *Flore du Senegal, éd. 2*: 428. Éditions ClairAfrique, Dakar.
- BURCHELL, W.J. 1822. Travels in the interior of southern Africa, vol. 1. Longman, Hurst, Rees, Orme and Borwn.
- CHEVALIER, A.J.B. 1908. Novitates florae Africae: Liliaceae. *Mémoires de la Société Botanique de France* 8: 89–95.
- DE WILDEMAN, E.A.J. 1921. *Plantae bequartianae*, vol. 1. Buyens, Gent & Lechevalier, Paris.
- DEB, D.B. & DASGUPTA, S. 1974. Revision of the genus *Urginea* Steinhil (Liliaceae) in India. *Bulletin of the Botanical Survey of India* 16: 117–124.
- ENGLER, A. 1895. Die Pflanzenwelt Ost-Afrikas. Reimer, Berlin.
- ENGLER, A. & KRAUSE, K. 1910 [1911]. Liliaceae africanae II. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 45: 123–155.
- FIGUEIREDO, E. & SMITH, G.F. 2008. Plants of Angola/Plantas de Angola. *Strelitzia* 22. South African National Biodiversity Institute, Pretoria.
- FRIES, R.E. 1916. Liliaceae. Wissenschaftliche Ergebnisse der Schwedischen Rhodesia-Kongo-Expedition 1911–1912 1. Botanische Untersuchungen Heft II. *Monocotyledones and Sympetales*: 225–231.
- FRIIS, I. & VOLLESEN, K. 1999. *Drimia sudanica*, nom. nov. (Hyacinthaceae), a rare species of the Sudanian grasslands. *Nordic Journal of Botany* 19: 209–212.
- GOLDBLATT, P. & MANNING, J.C. 2000. Cape plants: a conspectus of the Cape flora of South Africa. *Strelitzia* 9. National Botanical Institute, Cape Town & Missouri Botanical Garden, St Louis.
- HEPPER, F.N. 1968. Notes on tropical African Monocotyledons: I. *Kew Bulletin* 21: 491–498.
- HUTCHINSON, J. 1936. Liliaceae. In J. Hutchinson & J.M. Dalziel, *Flora of West Tropical Africa* 2: 338–352. Crown Agents for the Colonies, Westminster.
- JACQUIN, N.J. 1797. *Plantarum rariorum horti caesarei schoenbrunnensis*, vol. 1. Wappler, Vienna.
- JESSOP, J.P. 1970. Studies in the bulbous Liliaceae of South Africa: 1. *Scilla*, *Schizocarphus* and *Ledebouria*. *Journal of South African Botany* 36: 233–266.
- JESSOP, J.P. 1977. Studies in the bulbous Liliaceae of South Africa: 7. The taxonomy of *Drimia* and certain allied genera. *Journal of South African Botany* 43: 265–319.
- KATIVU, S. & DRUMMOND, R.B. 1994. New combination in the genus *Thuranthos* C.H. Wright and a new record for *T. macranthum* (Baker) C.H. Wright in Zimbabwe. *Kirkia* 15: 112–116.
- KER GAWLER, J. 1808. *Drimia altissima*, tallest *Drimia*. *Curtis's Botanical Magazine* 27: t. 1074.
- KER GAWLER, J. 1824. *Ornithogalum virens*. *The Botanist's Register* 10: t. 1074.
- KLOPPER, R.R., CHATELAIN, C., BÄNNINGER, V., HABÀSHI, C., STEYN, H.M., DE WET, B.C., ARNOLD, T.H., GAUTIER, L., SMITH, G.F. & SPICHTIGER, R. 2006. *Checklist of flowering plants of sub-Saharan Africa*. South African Botanical Diversity Network Report No. 42. SABONET, Pretoria.
- LINNAEUS, C. fil. 1782. *Supplementarum plantarum*. Braunschweig.
- MANNING, J. & GOLDBLATT, P. 2003. A new species and new combinations in *Drimia* (Hyacinthaceae: Urgineoideae). *Bothalia* 33: 109–111.
- MANNING, J.C., FOREST, F., DEVEY, D.S., FAY, M.F. & GOLDBLATT, P. 2009. A molecular phylogeny and a revised classification of four plastid DNA regions. *Taxon* 58: 77–107.
- MANNING, J., GOLDBLATT, P. & FAY, M. 2004. A revised generic synopsis of Hyacinthaceae in sub-Saharan Africa, based on molecular evidence, including new combinations and the new tribe Pseudoprosperaeae. *Edinburgh Journal of Botany* 60: 533–568.
- MARTÍNEZ-AZORÍN, M., CRESPO, M.B., JUAN, A. & FAY, M.F. 2011. Molecular phylogenetics of subfamily Ornithogaloideae (Hyacinthaceae) based on nuclear and plastid DNA regions, including a new taxonomic arrangement. *Annals of Botany* 107:1–37.
- OBERMAYER, A.A. 1978. *Ornithogalum*: a revision of the southern African species. *Bothalia* 12: 323–376.
- OYEWOLE, S.O. 1975. Taxonomic treatment of the *Urginea altissima* (L.) Baker complex in Nigeria. *Boletim da Sociedade Broteriana, sér. 2, 49*: 163–172.
- OYEWOLE, S.O. 1987a. Cytotaxonomic studies in the genus *Urginea* Stein. in West Africa. III. The case of *Urginea indica* (Roxb.) Kunth in Nigeria. *Annals of the Missouri Botanical Garden* 74: 131–136.
- OYEWOLE, S.O. 1987b. Cytotaxonomic studies in the genus *Urginea* Stein. in West Africa. IV. Population differentiation and karyotype variation in *Urginea indica* (Roxb.) Kunth. *Annals of the Missouri Botanical Garden* 74: 137–143.
- OYEWOLE, S.O. 1989. A new species of *Urginea* (Liliaceae) in Nigeria. *Annals of the Missouri Botanical Garden* 76: 623–625.
- PFOSSER, M., WETSCHNIG, W. & SPETA, F. 2006. *Drimia cryptopoda*, a new combination in Hyacinthaceae from Madagascar. *Linzer biologische Beiträge* 38: 1731–1739.
- RENDELE, A.B. 1894. The plants of Milanji, Nyasa-land, collected by Mr. Alexander White. *Transactions of the Linnean Society of London, ser. 2, Botany, 4,1*: 1–68.
- RICHARD, A. 1850. *Tentamen florae abyssinicae*, vol. 2. Bertrand, Paris.
- ROXBURGH, W. 1824. *Flora indica* 2. Serampore.
- SCHINZ, H. 1890. Beiträge zur Kenntnis der Flora von Deutsch-Südwest Afrika IV. *Verhandlungen des Botanischen Vereins für die Provinz Brandenburg* 31: 179–229.
- SCHOLZ, H. 1990 [1989]. Liliaceae. In P. Hiepko & H. Scholz, Additions et corrections à la "Flore analytique du Togo". *Bulletin du Muséum National d'Histoire Naturelle Section B, Adansonia, Sér. 4, 11,4*: 443, 444.
- SCHWEINFURTH, G. 1867. *Beitrag zur Flora Aethiopiens*. Reimer, Berlin.
- SPETA, F. 1998a. Systematische Analyse der Gattung *Scilla* L. s.l. (Hyacinthaceae). *Phyton* 38: 1–224.
- SPETA, F. 1998b. Hyacinthaceae. In K. Kubitzki, *The families and genera of vascular plants 3: Flowering Plants, Monocotyledons*: 261–285. Springer-Verlag, Berlin.
- SPETA, F. 2001. Die Echte und die Falsche Meerzwiebel: Charybdis Speta und Stellarioides Medicus (Hyacinthaceae), mit Neubeschreibungen und Neukombinationen im Anhang. *Stapfia* 75: 139–176.
- STAFLEU, F.A. & COWAN, R.S. 1976. *Taxonomic literature 1: A–G*. Bohn, Scheltema & Holkema, Utrecht.
- STEDJE, B. 1987. A revision of the genus *Drimia* (Hyacinthaceae) in East Africa. *Nordic Journal of Botany* 7: 655–666.
- STEDJE, B. 1996. Hyacinthaceae. In R.M. Polhill (ed.), *Flora of tropical East Africa*. Royal Botanic Gardens, Kew.
- STEDJE, B. & THULIN, M. 1995. Synopsis of Hyacinthaceae in tropical East and North-East Africa. *Nordic Journal of Botany* 15: 591–601.
- TROUPIN, G. 1955. *Plantae africanae IV. Monocotyledoneae*. *Bulletin du Jardin botanique de l'État à Bruxelles* 25: 221–237.
- VAN DER MERWE, F. 1943. *Schizocarphus nervosus*. *Flowering*

- Plants of South Africa* 23: t. 104.
- VON POELLNITZ, K.. 1944. Neue afrikanische Pflanzen. *Berichte der Deutschen Botanischen Gesellschaft* 61: 204–209.
- WEIMARCK, H. 1937. Beiträge zur Kenntnis der Flora von Süd Rhodesia. VI. *Botaniska Notiser* 1937: 440–442.
- WELWITSCH, F.M.J. 1859. *Apontamentos phytogeographicos*. Lisbon.
- WETSCHNIG, W., KNIRSCH, W., SHUJAIT ALI, S., & PFOSSER, M. 2007. Systematic position of three little known and frequently misplaced species of Hyacinthaceae from Madagascar. *Phyton* 47: 321–337.

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